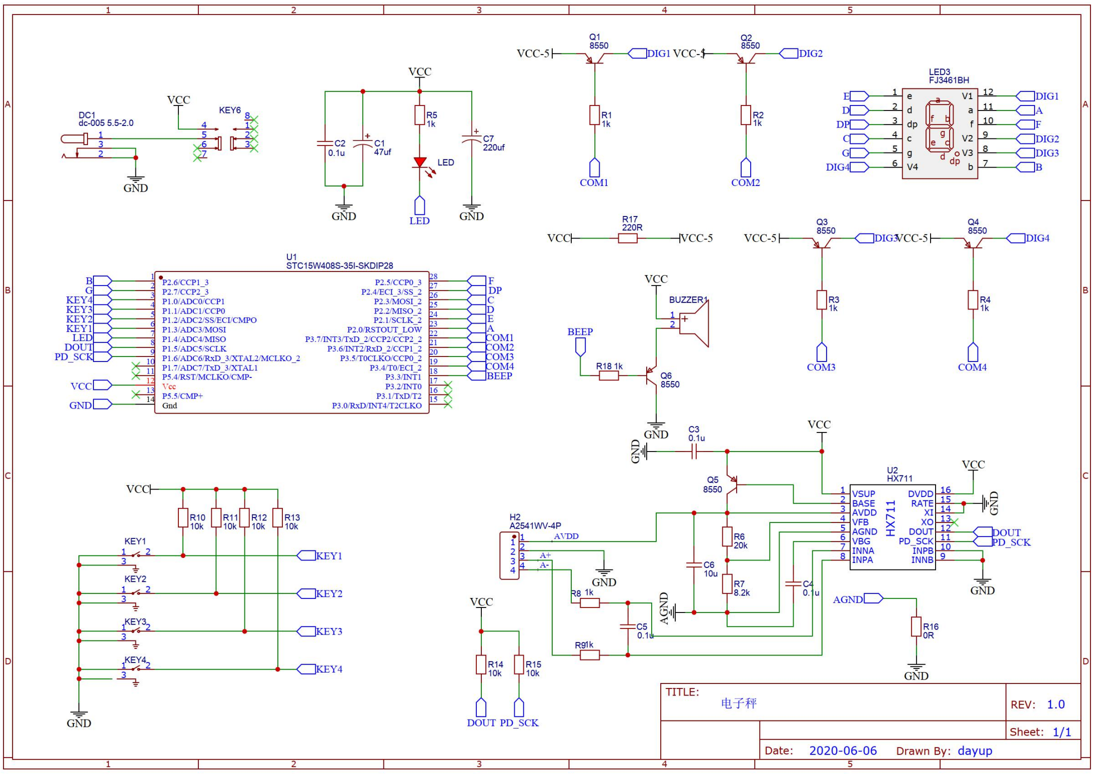
Electronic Scale

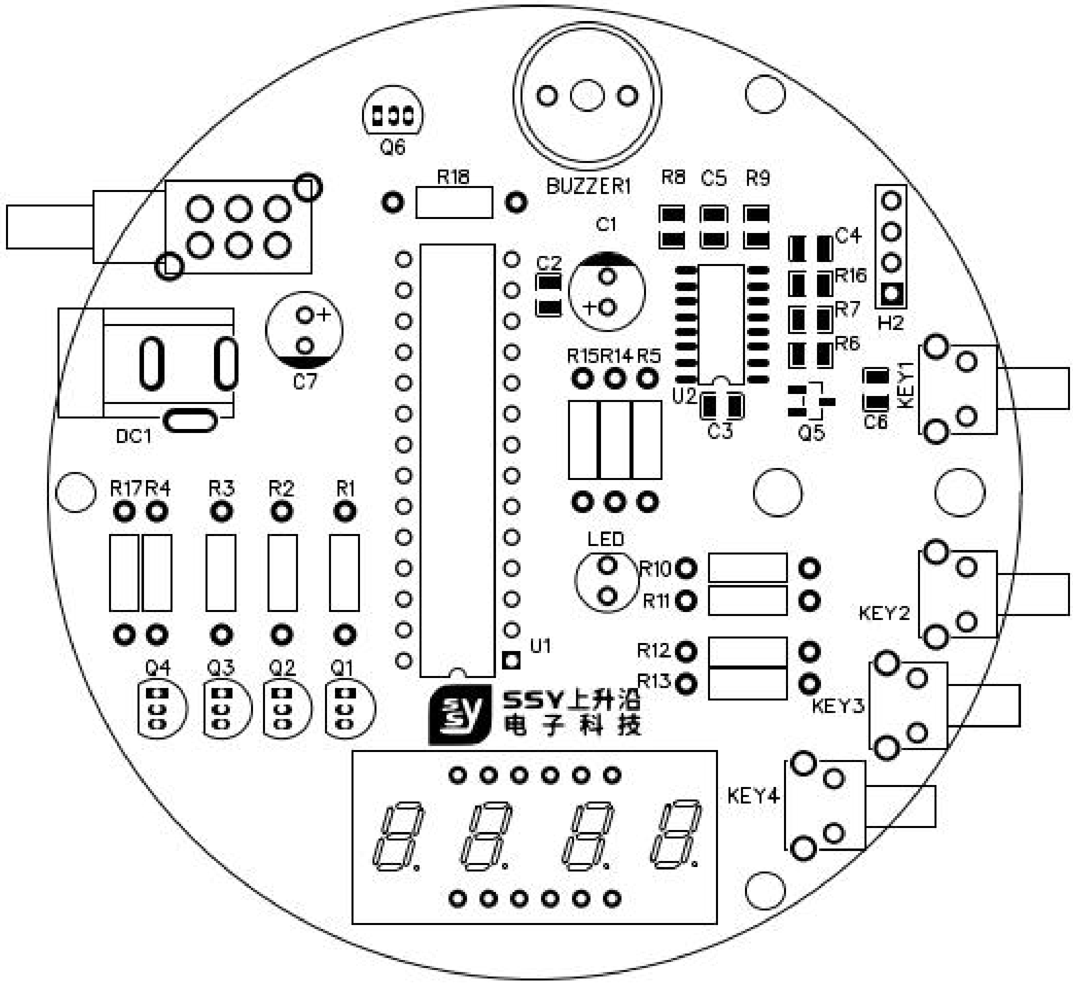
Feature:

Input voltage: DC5V
Maximum display range: 1KG
Function: 1: The digital tube displays the detected weight, and the detection unit can be switched (G/KG);
2: It has fine-tuning and calibration function to make the measured data more accurate;
3: When the detection unit is G, the resolution is 0.01g, when the detection unit is KG, the resolution
The rate is 1g;
4: With peeling function;
5: When the object exceeds the detection range, there will be an alarm;



Working principle: STC15W408S single-chip microcomputer is used as the main control, weighing dedicated AD
Chip HX711 sampling data, digital tube as a display device to display weight; there are four
Touch the button on the side foot as a human-computer interaction channel;

Front assembly drawing



Welding list (number corresponds to PCB component silk screen)

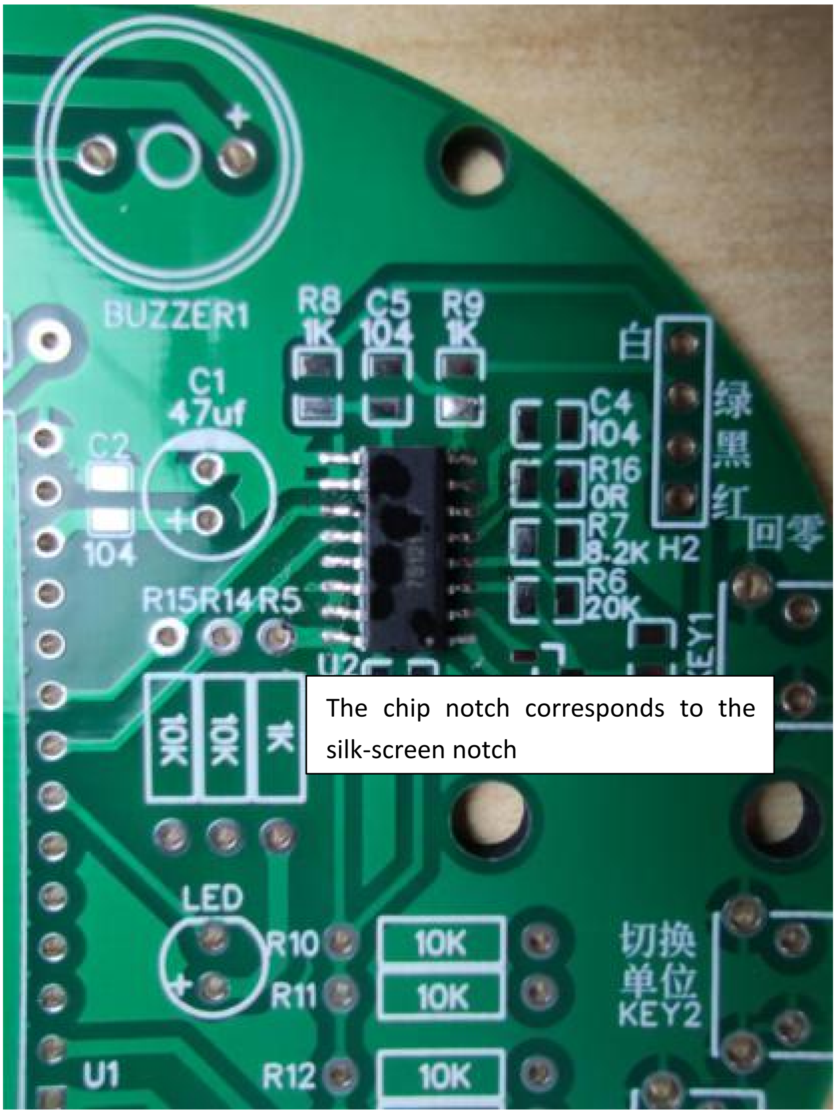
Num.	Component name	Marked	Parameter	Package	QTY.
1	Active buzzer	BUZZER1	Diameter 12mm	BUZ-TH_BD12.0	1
2	Electrolytic capacitor	C1	47uf/16V	Plug-in	1
3	Chip capacitors	C2,C3,C4,C5	104	C0805	4
4	Chip capacitors	C6	10u	C0805	1
5	Electrolytic capacitor	C7	220uf/16V	CAP-D6.3×F2.5	1
6	Power outlet	DC1	DC-005	Plug-in	1

7	Touch the button with your side foot	KEY1,KEY2,KEY3,KEY4	STP-1236B	Plug-in	4
8	Self-locking button	KEY6	PN22LENA03QE	Plug-in	1
9	Green light emitting diode	LED	3mm(5mm)	Plug-in	1
10	Digital Tube		3641BS	Plug-in	1
11	Triode	Q1,Q2,Q3,Q4,Q6	8550	Plug-in	5
12	Triode	Q5	8550	SOT-23	1
13	Metal film resistor	R1,R2,R3,R4,R5,R18	1k	R_AXIAL-0.4	6
14	Metal film resistor	R10,R11,R12, R14,R15,R13	10k	R_AXIAL-0.4	6
15	Chip resistor	R16	0R	R0805	1
16	Metal film resistor	R17	220R	R_AXIAL-0.4	1
17	Chip resistor	R6	20k	R0805	1
18	Chip resistor	R7	8.2k	R0805	1
19	Chip resistor	R8,R9	1k	R0805	2
20	Single chip microcomputer	U1	STC15W408S	DIP-28	1
21	Integrated chip	U2	HX711	SOP-16	1
22	IC Block			DIP-28	1
23	Load cell		1kg/81*13.5*13.5		1
24	Acrylic board		Diameter 80mm		1
25	Acrylic board		Diameter 15mm		2
26	screw		M4x10mm		2
27	screw		M4x20mm		4
28	Copper column (with nut)		M3		3
29	Copper pillar		M4x15mm		2
30	PCB board				1

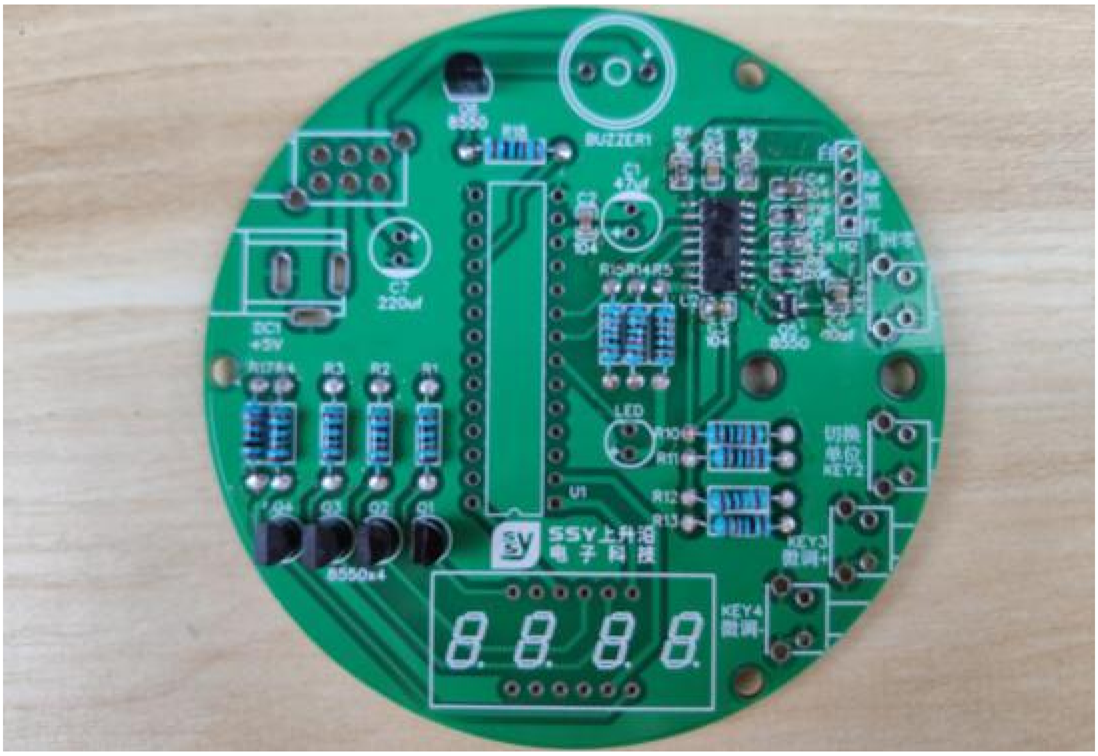
Production steps

1: Solder SMD components first

When soldering SMD components, first apply tin on one of the pads, solder one foot of the component first, and then add additional soldering to the remaining pads;

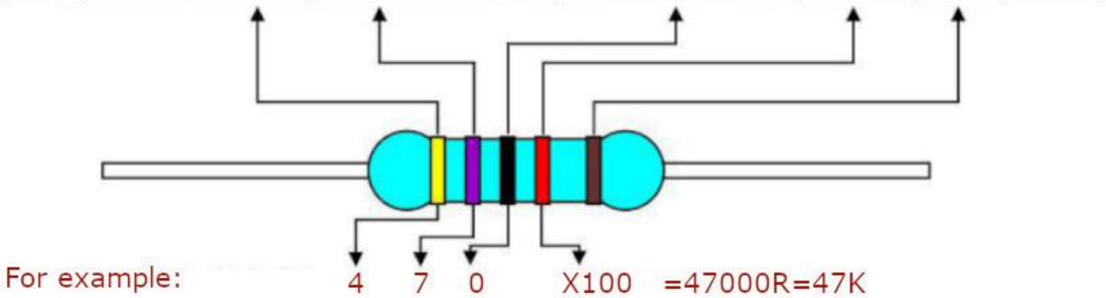


2: Find the metal film resistor and the plug-in transistor, and weld them at the corresponding positions. The resistance should match the resistance value on the silk screen; (welding sequence: from short to high, from small to large)



The resistance value of the metal film resistor can be calculated according to the figure below;

Color	The first paragraph	The second paragraph	The third paragraph	Multiplier	Error	
Black	0	0	0	1		
Brown	1	1	1	10	±1%	F
Red	2	2	2	100	±2%	G
Orange	3	3	3	1K		
Yellow	4	4	4	10K		
Green	5	5	5	100K	±0.5%	D
Blue	6	6	6	1M	±0.25%	C
Purple	7	7	7	10M	±0.10%	B
Grey	8	8	8		±0.05%	A
White	9	9	9			
Gold				0.1	±5%	J
Silver				0.01	±10%	K
None					±20%	M

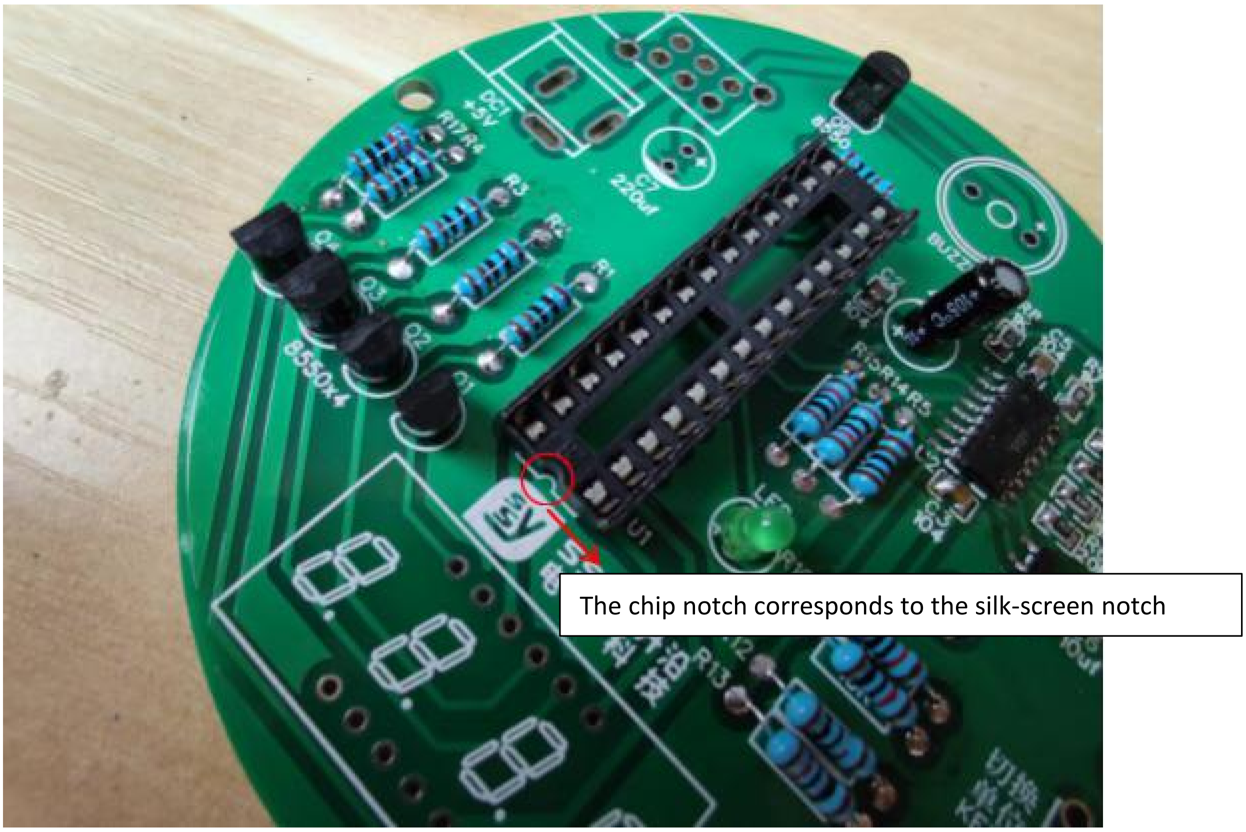


Unit conversion:

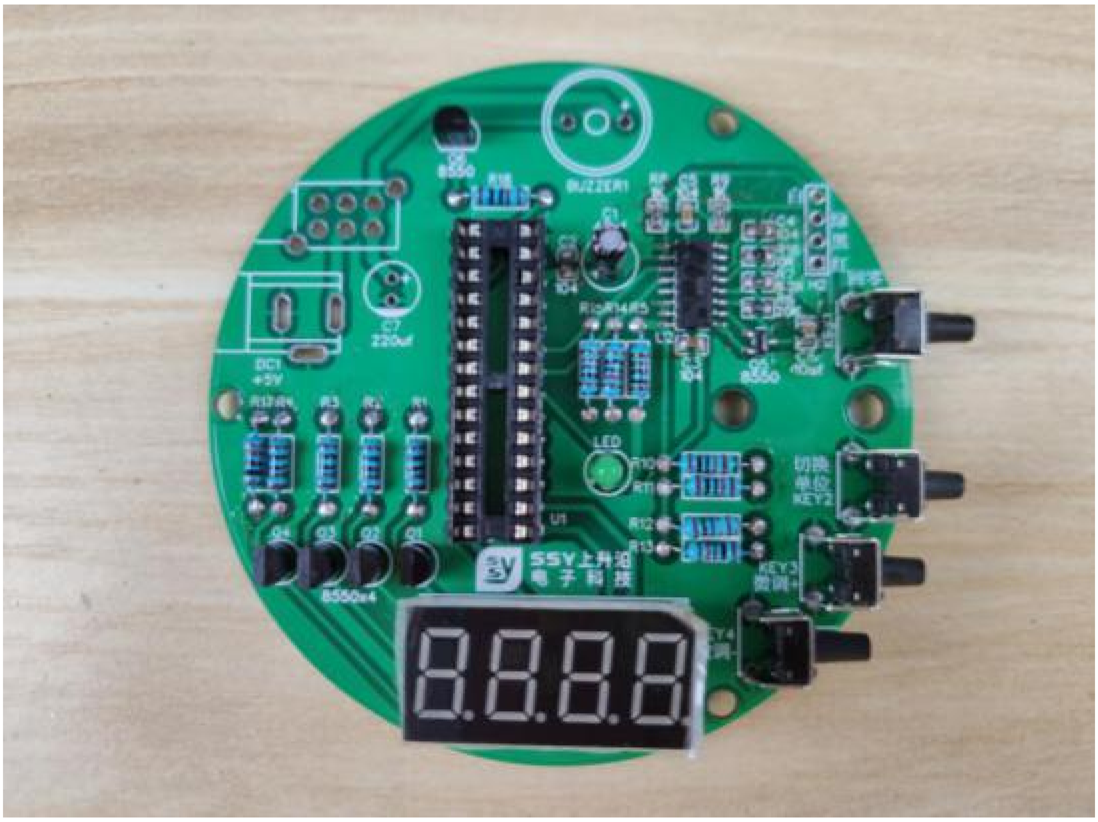
1K=1000R
10K=10000R
100K=100000R
1M=1000K=1000000R
10M=10000K=10000000R

3: Welding other devices, the positive and negative poles of the light-emitting diode and the electrolytic capacitor should be distinguished, the long leg is the positive pole, corresponding to

"+"; the notch of the chip holder corresponds to the silk screen;

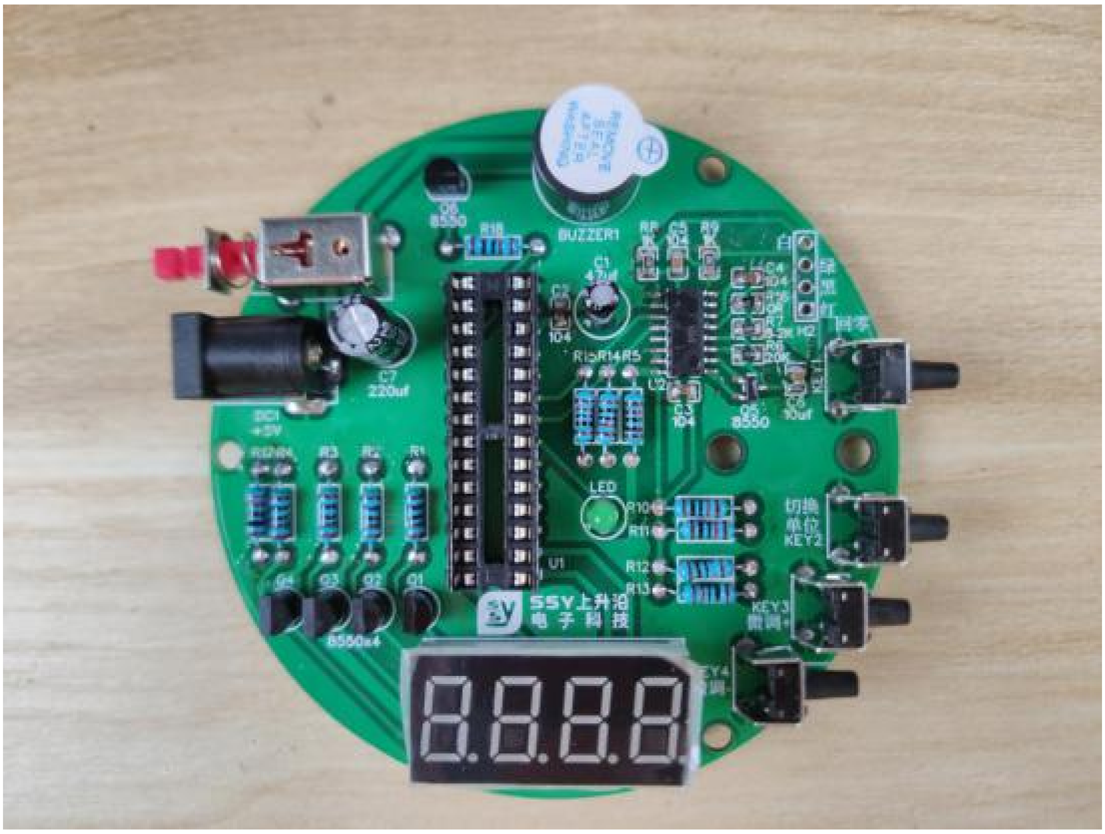


4: For welding other devices, the direction of the digital tube must be correct and not reversed;



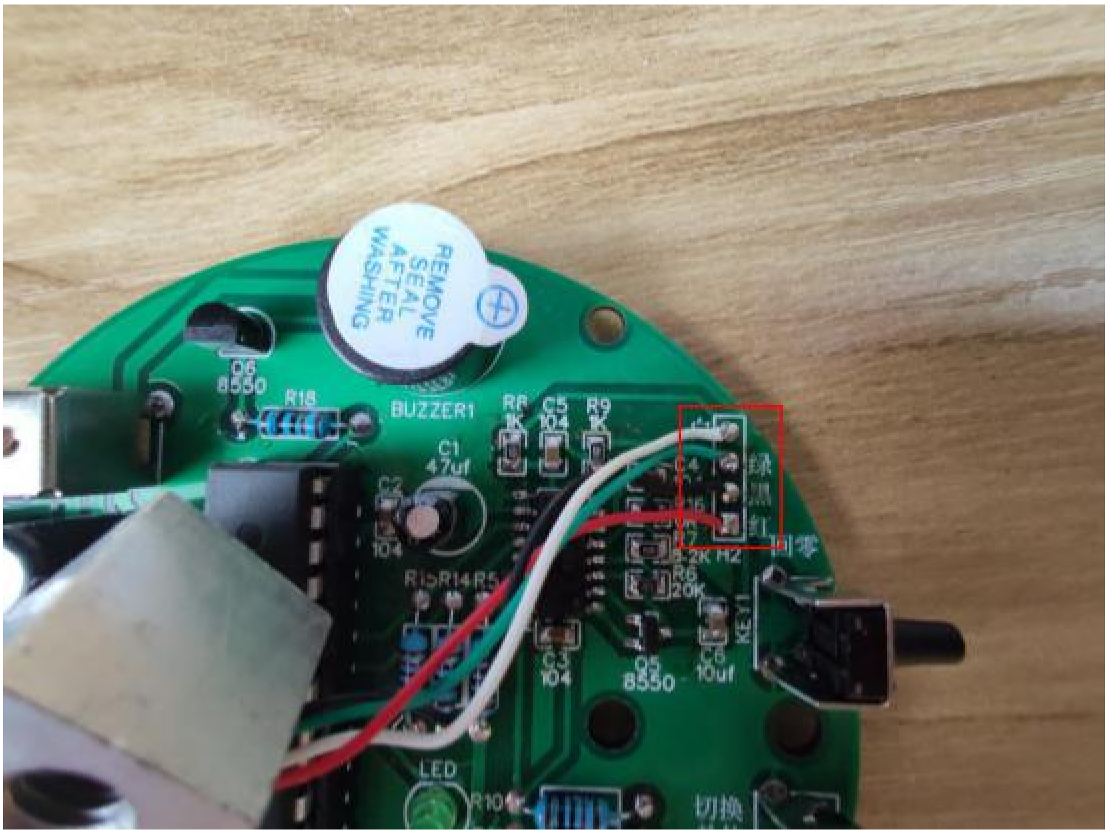
5: Finally, add welding other devices, the positive and negative of the buzzer need to be distinguished clearly; insert the single-chip microcomputer chip; the notch of the chip and the

notch of the chip holder need to correspond.



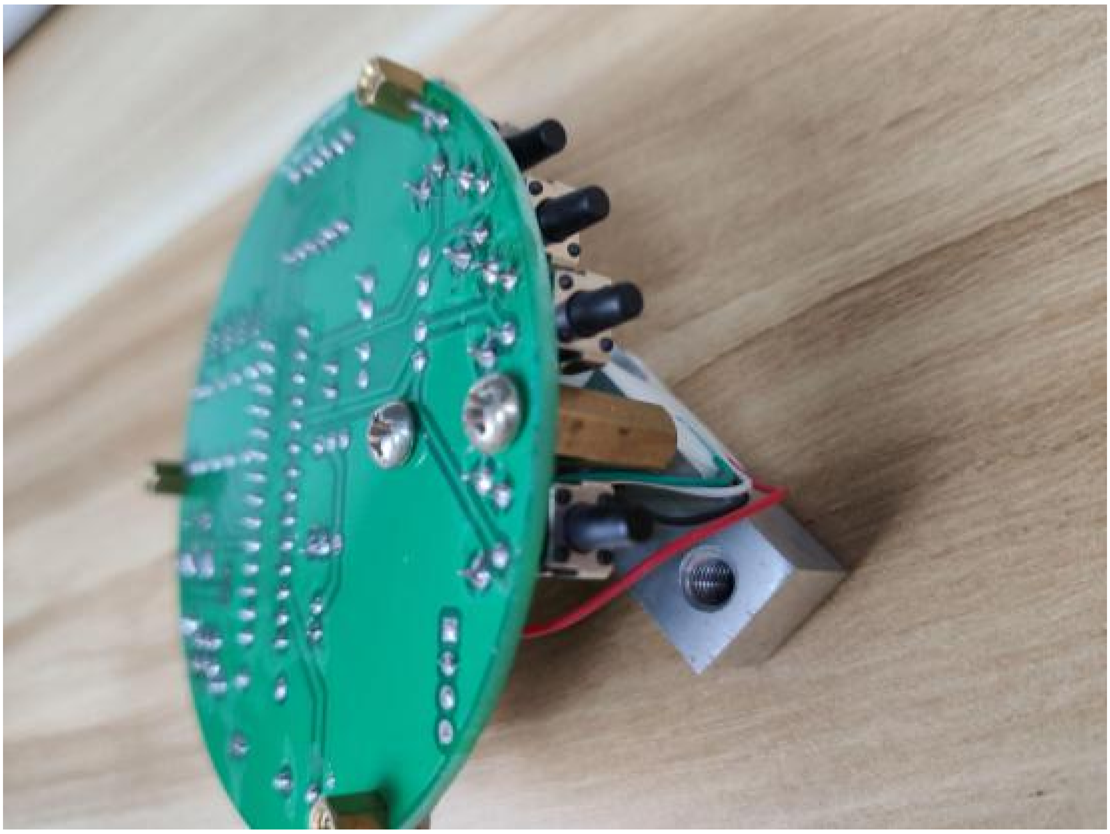
6: Finally weld the gravity sensor, the white line corresponds to white, the green line corresponds to green, and so on;

Do not solder the glue wire to the pad (the metal wire in the glue wire must be exposed and soldered to the pad)

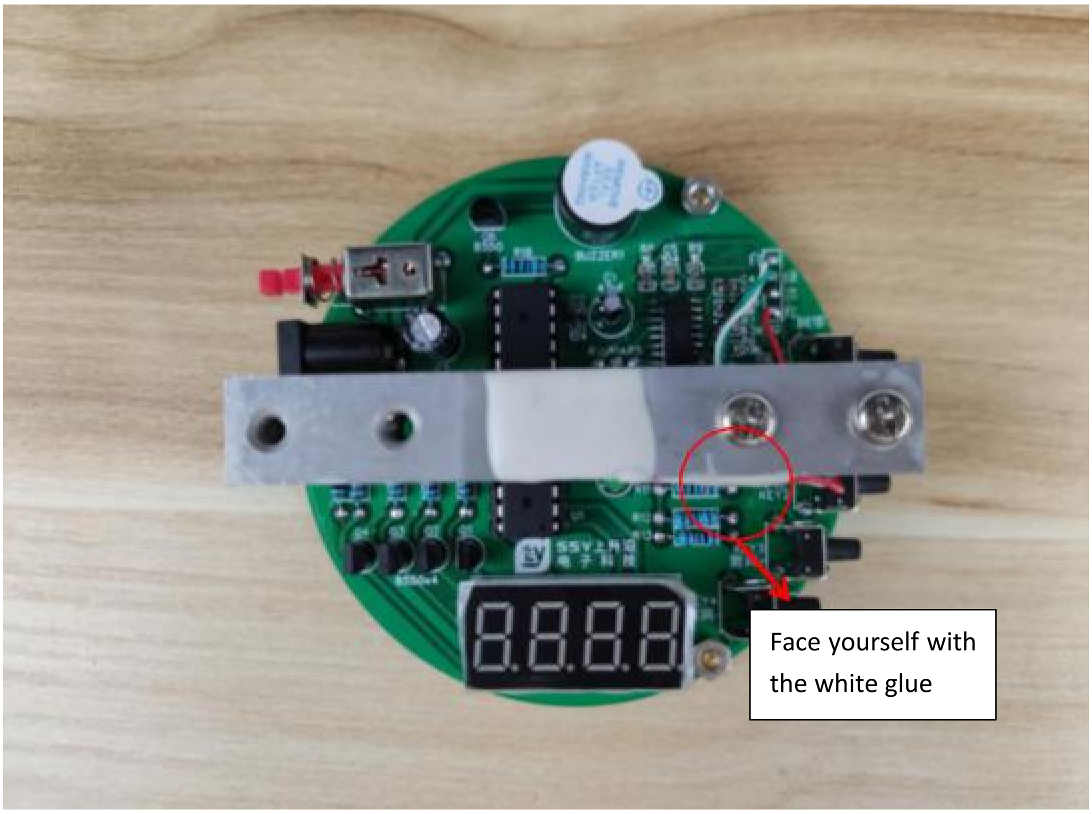


7: Assemble the electronic scale

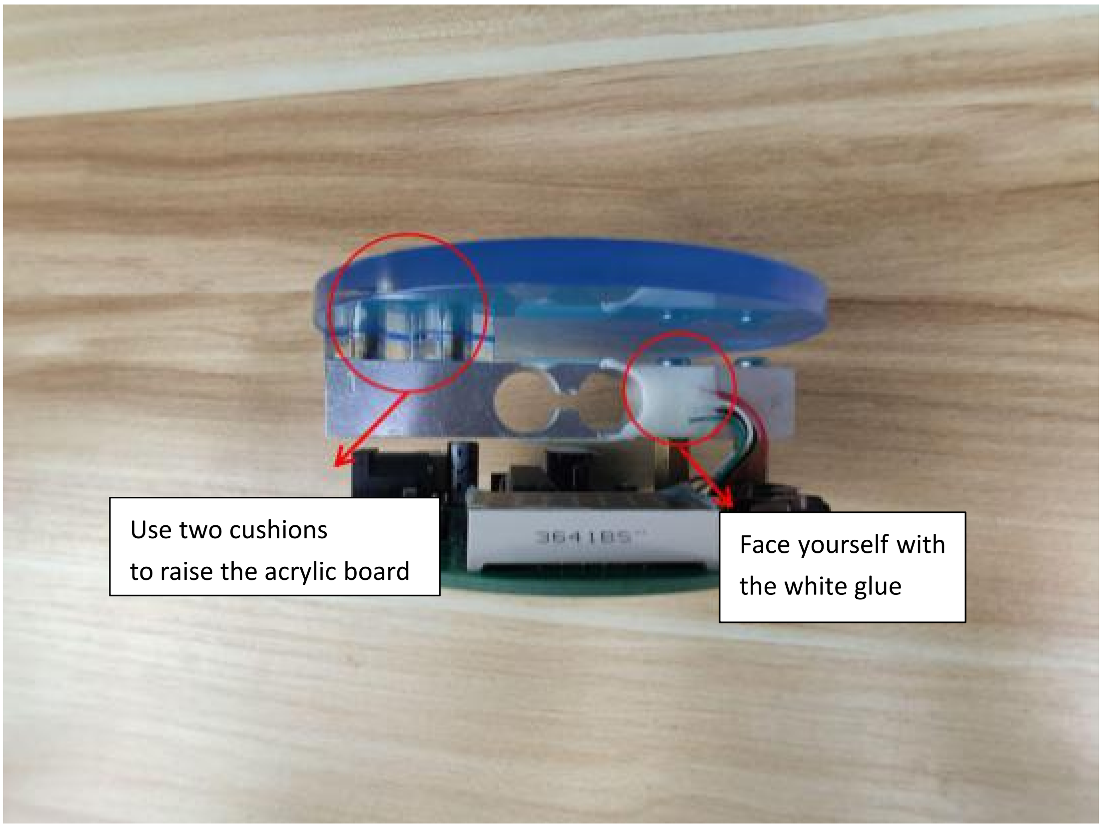
First fix it on the board with two short screws and copper pillars;



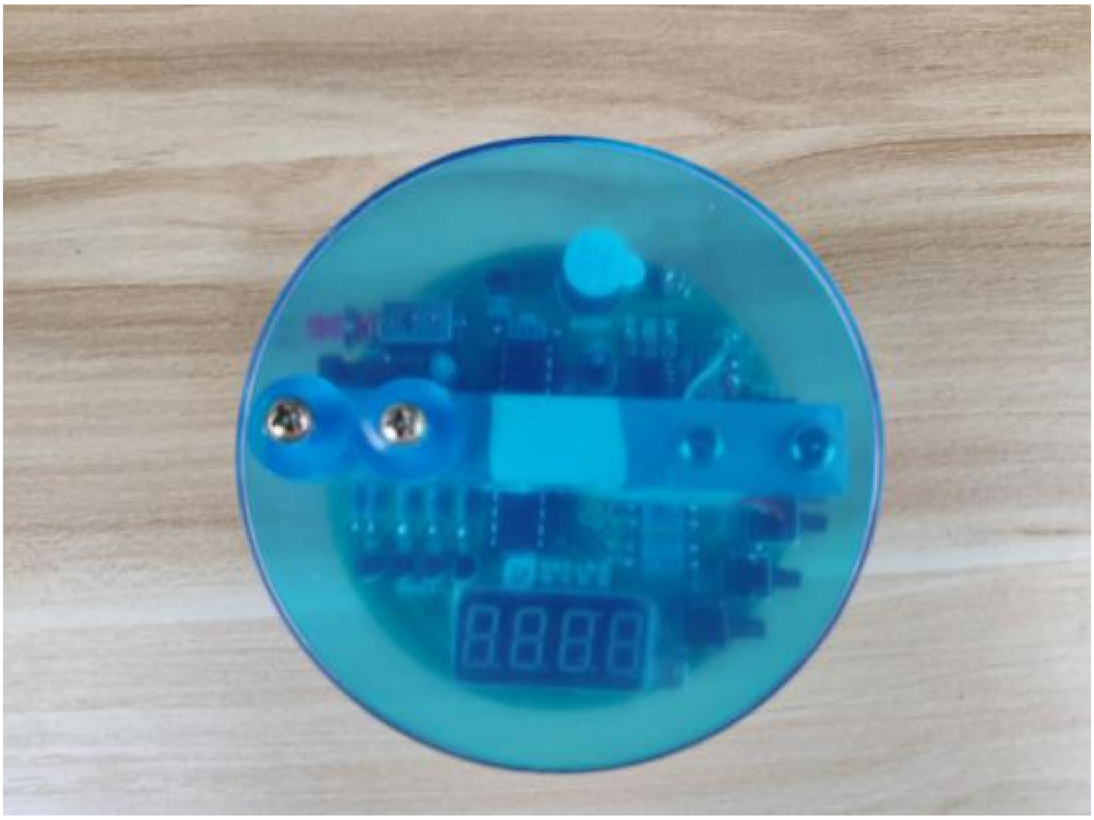
Use two long screws to fix the sensor;



Fix the acrylic board;



Finally, the acrylic film can be removed to become transparent;



Use tutorial:

(1) After welding the product, plug in the power supply, press the switch, the LED will light up, and the buzzer will beep for a few seconds, the digital tube will display 0.00, the unit is KG, the minimum scale is g, and the range is 1KG , More than 1KG, the buzzer will alarm;
(2) Put the electronic scale on a horizontal table top, and press the zero button to reset;
(3) Press the switch unit button, the digital tube displays 00 .00, the unit is g, the minimum scale is 0.01g, and the maximum range is 99.99g. When the weighed weight exceeds the range, the buzzer will alarm. Press the switch unit button to switch the unit to KG, and the buzzer will cancel the beep;
(4) With memory fine-tuning function, for example, when weighing 100g objects, the digital tube displays 98g, you can press the fine-tuning + button to adjust to 100g to improve the accuracy, otherwise press the fine-tuning -.
(5) The zero return button can be used as a tare;